

HW4

C:\Users\made\Desktop\CS260 HW4\HW4(1).asm - MARS 4.5

File Edit Run Settings Tools Help

Run speed at max (no interaction)

Execute

Text Segment	Address	Code	Basic	Source
0x00400000	0x4100061	addiu \$16,\$0,\$7	14:	li \$a0, 'a' #0 -> char 'a'
0x00400004	0x3c011001	lui \$1,\$0x7f	15:	la \$a0, buffer #0 -> address of buffer string
0x00400008	0x34320040	ori \$10,\$1,\$4	16:	
0x0040000c	0x24020008	addiu \$2,\$0,\$0	17:	li \$v0, 0 #read the input
0x00400010	0x3c011001	lui \$1,\$0x7f	18:	la \$a0, mystring #a0 -> address of mystring
0x00400014	0x34240000	ori \$4,\$1,\$0	19:	
0x00400018	0x24050040	addiu \$5,\$0,\$4	19:	li \$a1, 64 #64 max input
0x0040001c	0x0000000c	syscall	20:	syscall
0x00400020	0x00048821	addu \$17,\$0,\$4	22:	move \$a1, \$a0 #a0 stores the address of the string
0x00400024	0x00114021	addu \$9,\$0,\$17	23:	move \$t1, \$a1 #t1 temp stores the address of the string
0x00400028	0x91240000	lbu \$t2,0(\$t1)	25:	lbu \$t2, 0(\$t1) #t2 -> current character
0x0040002c	0x11400002	bneq \$t2,\$0,\$0	26:	bneq \$t2, Checking #if t2 = \0 character, go to Checking block

0x10010000 (data) Hexadecimal Addresses Hexadecimal Values ASCII

Mars Messages Run I/O

abbbba
abbbb
Clear
-- program is finished running --
bbbbba
bbbbbb

Registers Coproc 1 Coproc 0

Name	Number	Value
\$zero	0	0
\$at	1	268500992
\$v0	2	10
\$v1	3	0
\$a0	4	268501056
\$a1	5	64
\$a2	6	0
\$a3	7	0
\$a4	8	0
\$t1	9	268500998
\$t2	10	97
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$a0	16	97
\$a1	17	268501000
\$a2	18	268501063
\$a3	19	0
\$a4	20	0
\$a5	21	0
\$a6	22	0
\$a7	23	0
\$a8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479540
\$fp	30	0
\$ra	31	0
pc		4194336
hi		0
lo		0

1.

C:\Users\made\Desktop\CS260 HW4\HW4(2).asm - MARS 4.5

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Execute

HW4(1).asm	HW4(2).asm
13	.globl main
14	main:
15	li \$a0, 12 #x=12
16	\$y = simpleEx(x,x-5)
17	move \$a0, \$a0 #move a0 to a0, first argument
18	addi \$a1, \$a0, -5 #a1 = x-5 second argument
19	jal simpleEx #calls the function
20	move \$a2, \$v0 #y = simpleEx(x,x-5)
21	\$y=y+simpleEx(14,x)
22	move \$a1, \$a0 #a1 = x=12
23	li \$a0, 14 #a0 = 14
24	jal simpleEx #call function
25	add \$a2, \$a2, \$v0 #y = y+simpleEx(14,x)
26	#exit
27	li \$v0, 10
28	syscall
29	simpleEx: #function simpleEx
30	addi \$sp, \$sp, -4 #allocate space
31	sw \$a0, 0(\$sp) #save \$a0 on sp
32	li \$a1, 7 #a1 = x=7
33	add \$v0, \$a0, \$a1 #v0 = x+y
34	add \$v0, \$v0, \$a1 #v0 = x+2y
35	sub \$v0, \$v0, \$a1 #v0 = x+2y-x
36	lw \$a0, 0(\$sp) #get a0
37	addi \$sp, \$sp, 4 #free the space
38	jr \$ra #return to next instruction after function call and return v0
39	

Line: 25 Column: 41 Show Line Numbers

Mars Messages Run I/O

-- program is finished running --
Clear

Registers Coproc 1 Coproc 0

Name	Number	Value
\$zero	0	0
\$at	1	0
\$v0	2	10
\$v1	3	0
\$a0	4	14
\$a1	5	12
\$a2	6	0
\$a3	7	0
\$a4	8	0
\$t1	9	0
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$a0	16	12
\$a1	17	7
\$a2	18	50
\$a3	19	0
\$a4	20	0
\$a5	21	0
\$a6	22	0
\$a7	23	0
\$a8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479540
\$fp	30	0
\$ra	31	4194336
pc		4194348
hi		0
lo		0

2.